

center" in the brain, initiating or coordinating specific antibody formation. Schamburrow² of the Moscow Clinical Institute injected *E. coli* and *E. typhosa* vaccines into the anterior chamber of the right eye of rabbits, and reported a local synthesis of specific agglutinins in the injected eye, with their "reflex" synthesis in the opposite eye. In many of his rabbits only a trace of agglutinin was demonstrable in the blood stream with many multiples of this amount in the non-injected eye. He translated these data as proof of a reflex local antibody synthesis by non-vaccinated tissues, presumably through a hypothetical "immunity center."

Although his alleged "reflex ocular immunity" could not be confirmed by American investigators,³ the probable rôle of the sympathetic nervous system in specific antibody formation has been quite generally affirmed. As early as 1898, Salomonsen and Madsen⁴ demonstrated a marked increase in antitoxin titer in horses as a result of the administration of parasympathetic stimulants (pilocarpin). Joachimoglu and Wada⁵ afterwards reported the opposite effect, a reduction in specific agglutinin production in rabbits as a result of the administration of parasympathetic depressants (atropin). In a recent summary of accumulated data Belák⁶ concluded that in their relationship to the autonomic nervous system antibodies can be divided into two groups: (i) a "sympathogenic group," including complement and normal opsonins, which are favored by sympathetic stimulants and inhibited by the parasympathetic, and (ii) a "parasympathogenic group," including antitoxins, precipitins, and bacteriolysins, which have the opposite relationship, being favored by the parasympathetic stimulants and inhibited by the sympathetic.

This division of antibodies into two neurogenic groups was of little practical interest at the time. With the development of the modern surgical practice of regional sympathectomy, however, the theory became of practical clinical value. The experimental evidence in support of the neurogenic theory of immunity was, therefore, reexamined by the Hungarian physiologists. They found the pharmacologic evidence inconclusive due to the presumptive direct toxic action of atropin, pilocarpin, etc., on antibody-forming tissues. To obtain conclusive evidence, Went and Lissák performed total sympathectomy on a group of cats, the operation being performed in several stages by the Cannon⁷ technique. Four to six weeks after complete recovery from the last stage of the operation, blood samples were titrated for complement and bactericidal power, *E. coli* being used as the test organism. Control titrations were made with an equal number of non-operated cats. Within the limits of the experimental error, the complement and colicidal titers were identical in the two groups. From this it was evident that the integrity of the sympathetic nervous system is not essential for the production and maintenance of

normal serum titer. Alterations of serum titer reported by previous investigators as a result of the administration of sympathetic stimulants or depressants are presumably due to direct toxic action on extra-neural tissues.

The same group of sympathectomized cats was afterwards tested for their ability to synthesize specific antibodies. Foreign proteins and non-viable bacterial vaccines were injected into these cats, with control injections into an equal number of normal cats. With the limited number of sympathectomized animals for such tests, no qualitative or quantitative differences were demonstrable between their power to synthesize antibodies and the production of the same antibodies in normal controls. From this they concluded that the sympathetic nervous system plays no rôle in the production or coordination of acquired humoral immunity.

Their data suggest that regional sympathectomy is without deleterious effect on natural or acquired immunity, and would be of no benefit in regional anaphylaxis. It should be emphasized, however, that their studies were confined to the humoral factors in immunity and anaphylaxis. With the obsolescence of the Ehrlich side-chain theory⁸ it is no longer axiomatic that humoral and cellular chemical defenses are either qualitatively or quantitatively identical. Effect of sympathectomy on fixed tissue defense is still an open question.

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MALPRACTICE PROPHYLAXIS

It is fundamental that every patient be cared for with meticulous attention to the requirements of good medical practice. This comprehends sufficiency of investigation, observation and treatment; utilization of every indicated laboratory aid; protection of those coming in contact with the patient; instruction, when necessary, of the patient and of those caring for the patient, so that all things needed may be carried out during the absence of the attending physician; recognition of the importance of psychological

factors so that the nervous, mental, and emotional balance of the patient may be constructively influenced by tactful handling and the institution of proper psychotherapeutic measures; making and preserving of a complete and accurate record of the history, examination, treatment and progress of the case.

It is also fundamental that, in undertaking the care of patients, the physician should accept only such cases as he is well qualified to handle. The physician must keep abreast of progress in his field, and should utilize accepted and recognized procedures. In any case, if the patient is not doing well, or is complaining or expressing dissatisfaction, a consultant should be brought in. The use of a consultant affords great protection in the event that a claim of malpractice is later made. It is recommended that protective use of consultants be made routine, even in cases where a consultant's fee may not be available. It is also important to exercise care in delegating duties to assistants, nurses, and technicians; and in maintaining professional instruments and apparatus, as well as a safe environment in which to work. Instruments should be checked and apparatus calibrated as required in the exercise of ordinary care.

It must be recognized that it is hazardous to sterilize any patient in the absence of a medical indication; that it is dangerous to telephone a prescription, because of the possibility of error in transmission; and that, without taking legal advice, it is unwise for a physician to testify at a coroner's inquest in a case wherein which he has been in professional attendance.

In any consideration of malpractice prophylaxis, keeping good medical case records is the most important single factor. It is desirable that a physician ask himself, from time to time, what he would wish to have in the record in the case under treatment, in the event that he should later be called upon to justify his conduct of the case in court. "Ideal" medical case records should be kept in every instance—records that would be presentable when offered in court; records that clearly show what was done and when it was done; records that indicate that nothing was neglected, that the care given fully met the standard demanded by the law. In the event that any patient discontinues treatment before he should or fails to follow instructions, let the record show it. A good method is to file a carbon copy of the letter sent to the patient advising him against the unwise course. The records should, of course, also contain the laboratory reports, consultant's reports, and certain miscellaneous forms which are necessary or desirable in particular cases, such as consent to operation, consent to autopsy, copies of reports required to be made by law; acknowledgment of hazards of particular procedures (shock therapy, fever therapy, x-ray therapy), etc.

The importance of tact can hardly be over-emphasized. It should be manifest especially in

the handling of the patient and the patient's family; in the avoidance of fee disputes, and unwise efforts and methods in the collection of fees (considering the provisions of the Statute of Limitations); in the avoidance of over-optimistic prognoses and, especially, of any promise constituting a guarantee of a particular result; in the avoidance of betrayal of privileged communications; in the avoidance of making any statement constituting, or which might be construed as, an "admission" of fault or negligence; in the avoidance of any reference to malpractice insurance protection; in the securing of legal advice before making any statement in regard to a malpractice claim or suit; etc.

A physician is not required to accept any patient. However, once the physician-patient relationship is established, the physician must give, or see that there is given, such care and attention as the case requires until the professional service is no longer needed, unless he is sooner discharged by the patient or unless he withdraws from the case. The physician may withdraw from the case, but he must first give reasonable notice, and there must be reasonable opportunity to fill his place. The fact that a physician is unable to attend a patient who needs him, merely because he is busy with other patients, will not relieve him of liability if the patient thereby suffers injury. It is desirable that a physician advise his patients of any intended absence from practice and that he recommend, or make available, a qualified, independent substitute.

The precipitating cause of a majority of all malpractice actions is found in the destructive comments or criticism of physicians in regard to treatment given to patients by other physicians. Commonly it is criticism by a succeeding physician of the work of his predecessor on the case. Legitimate criticism can rest only on full knowledge of the facts as gathered from all parties, from the physician who treated the patient as well as from the patient. Unethical criticism must be avoided.

An examination of the cases reveals the significant fact that malpractice claims arise almost invariably out of the first course of treatment. In other words, it is rare indeed that an old patient instigates suit against his physician. It follows that the physician should be "malpractice conscious," especially in dealing with the new or casual patient. Prevention is the best defense against malpractice actions.

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